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(71) Applicant: Ricoh Company Ltd.
Tokyo 143-8555 (JP)

(72) Inventor: Yokoi, Kenya
Kawasaki-shi, Kanagawa (JP)

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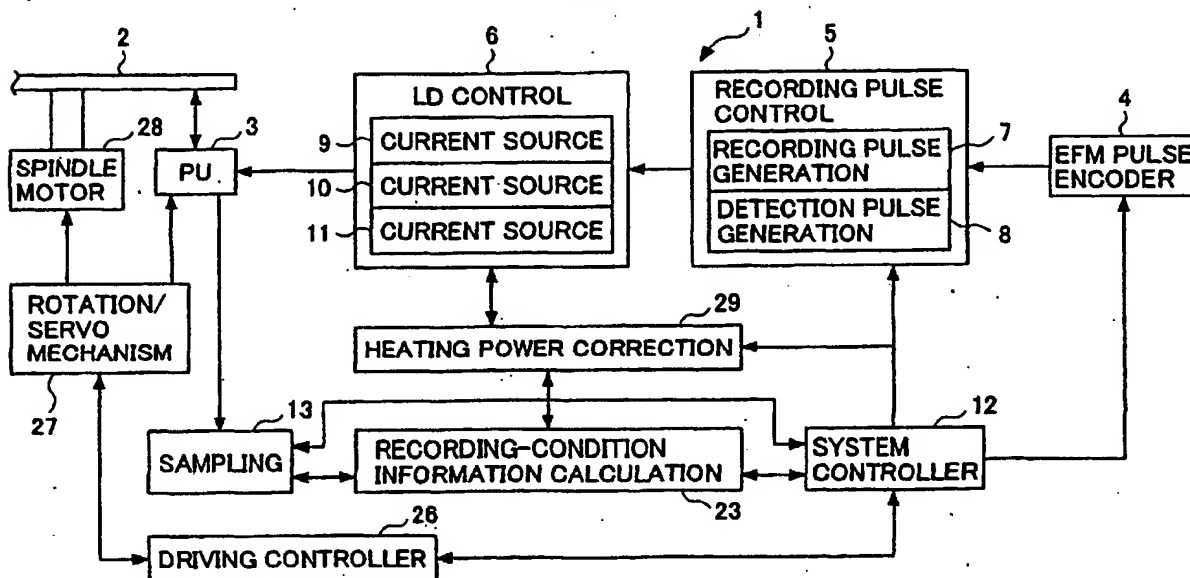
(74) Representative: Lamb, Martin John Carstairs
Marks & Clerk
90 Long Acre
London WC2E 9RA (GB)

(54) Optical information recording employing improved recording power control scheme

(57) A disk apparatus performs optical recording on to an optical disk with a record mark by using a light beam modulated in a manner of multi-pulse series, includes. A detection pulse generating part (8) generates

a detection pulse to replace the multi-pulse series; and a detection power control part (29) controls the power of the detection pulse to be smaller than the power of the multi-pulse series.

FIG.6





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EUROPEAN SEARCH REPORT

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 18 January 2005	Examiner Brezmes Alonso, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EUROPEAN SEARCH REPORT

Application Number
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 18 January 2005	Examiner Brezmes Alonso, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-36

An information recording apparatus of performing optical recording onto a recording medium with a record mark by using a light beam modulated in a manner of multi-pulse series, comprising: a detection pulse generating part generating a detection pulse to replace a multi-pulse series; and a detection power control part controlling the power of the detection pulse to be smaller than the power of the multi-pulse series.

2. claims: 37-42

An information recording apparatus of performing optical recording onto a recording medium with a record mark by using a light beam modulated in a manner of recording pulse series, comprising: a clock frequency change part changing a recording clock frequency according to a recording line velocity so as to make a recording line density uniform and a recording power calculating part calculating a recording power in accordance with the change in recording line velocity by using an approximation formula; wherein: a recording area of the recording medium is concentrically divided into a plurality of recording zones; an end portion of record data recorded on a recording zone of the plurality of recording zones is reproduced; from a signal characteristic obtained from a thus-obtained reproduction signal, the approximation formula is corrected so that an ideal signal characteristic may be obtained; and the thus-corrected approximation formula is used for determining the recording power for recording onto a subsequent recording zone.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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